UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

JUN 12 2017

OFFICE OF
AIR AND WASTE

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Doug Gallucci
Assistant Director, EH&S Environmental Programs
University of Washington
Environmental Safety Office Building, Box 354110
4109 Franklin Place NE
Seattle, Washington 98195-4110

Subject: Approval for On-site Cleanup and Disposal of PCB Remediation Waste
UW North Campus Housing- Haggett Hall

Dear Mr. Gallucci:

On May 4, 2017, the U.S. Environmental Protection Agency (EPA) received a letter (Notification) from the University of Washington (University) describing the nature and extent of Polychlorinated Biphenyl (PCB) contamination at Haggett Hall, and requesting approval of the accompanying Workplan. The Workplan detailed the University's plans for cleanup and disposal of PCB remediation waste in accordance with the self-implementing regulations at 40 Code of Federal Regulations (C.F.R.) § 761.61(a). The EPA noted some minor deficiencies in the Workplan, which the University clarified and corrected in two emails dated June 6, 2017. These emails serve as an addendum to the Workplan, and taken together with the Workplan and Notification, provide the basis for EPA's approval.

The EPA has completed its review of the Notification and accompanying Workplan. As discussed below, the EPA approves the Workplan under the authority of 40 C.F.R. § 761.61(a) and § 761.61(c). The EPA finds that the Notification, characterization, cleanup, disposal, and recordkeeping of PCB-contaminated concrete is in accordance with the requirements under 40 C.F.R. § 761.61(a). However, the University has requested approval to deviate from the confirmation sampling required in 40 C.F.R. § 761.61(a). The EPA finds that the University's plan to rely on existing characterization samples for the purpose of disposal presents no unreasonable risk of harm to health or the environment, therefore this deviation from 40 C.F.R. § 761.61(a) confirmation sampling requirements is approved pursuant to 40 C.F.R. § 761.61(c).

Background:

The University is planning to demolish the Haggett Hall student housing building on the north side of campus. Haggett Hall is comprised of two towers (north and south) and a central common area with an underground three story parking garage. The transformer rooms, known as the north and south transformer rooms, are situated on the second floor of the three story underground parking garage, above

the open space of the lower (third) level of the parking structure. Therefore, there are no soils underneath the transformer rooms.

The current switchgear in the north transformer room was installed in February 1996, and the current transformer in the south transformer room was installed in March 1996, following the removal of the previous transformers and the cleanup and encapsulation of the PCB-contaminated portions of the concrete floors. Prior cleanup of the north transformer room included triple wash rinsing an area 4.3 feet by 5.7 feet, followed by scabbling a 1/8-inch-thick surface over a 24-inch by 24-inch area. A confirmation wipe sample contained PCBs at 25 $\mu g/100cm^2$, which is above the TSCA regulatory action limit of 10 $\mu g/100cm^2$, leading to encapsulation by triple coating the area with an epoxy paint. In the south transformer room, the concrete floor in the footprint of the former transformer was encapsulated with three coats of epoxy paint, and an area 3-feet by 6-feet under the switchgear was washed and rinsed six times. Confirmation wipe samples showed PCB concentrations below the TSCA regulatory action level.

In September 2016, the University collected porous surface samples of the concrete floors in the north and south transformer rooms following the "EPA Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (PCBs)," dated May 2011, as described in the August 8, 2016 "PCBs Concrete and Soil Sampling Work Plan and Sampling and Analytical Plan". Samples were collected from the floor both under the epoxied areas, as well as outside the boundaries of the epoxy. In each room, a single location returned PCB concentrations at 1.1 mg/kg (ppm) in the concrete. All other sample locations were $\leq$ 1 mg/kg or below the reporting limit of 0.10 mg/kg. The University further refined the extent of PCB concentrations > 1 mg/kg in the concrete in a follow-up sampling event in November 2016. No additional locations with PCBs > 1 mg/kg, or above the cleanup level, were identified.

The PCB-contaminated concrete from the north and south transformer rooms is considered "PCB remediation waste," as defined in 40 C.F.R. § 761.3. The Workplan states that the cleanup level for the site is $\leq$ 1 ppm to be considered a cleanup without further conditions in accordance with 40 C.F.R. 761.61(a)(4)(i)(A). The University intends to use the existing characterization sample results from 2016, which fully delineate the extent of PCB contamination >1 ppm, to separate concrete above the cleanup level from concrete below the cleanup level for the purpose of disposal. Concrete flooring around the sample locations where PCBs exceeded 1 ppm will be removed, as delineated in the Workplan, prior to demolition of the second floor of the parking garage. The PCB-contaminated concrete flooring will be segregated and disposed of at the Chemical Waste Management RCRA Hazardous Waste Landfill in Arlington, Oregon in accordance with 40 C.F.R. § 761.61(a)(5)(v)(A)(3). The EPA will not require verification sampling, as required for 40 C.F.R. § 761.61(a), since all concrete will be removed, segregated, and disposed of based on existing sampling results and there will be no remaining substrate. The EPA finds that this method will not pose an unreasonable risk of injury to health or the environment, therefore, EPA approves this deviation from 40 C.F.R. § 761.61(a) confirmation sampling requirements pursuant to 40 C.F.R. § 761.61(c).

Approval of your Notification and Workplan, under the authority of 40 C.F.R. § 761.61(a) and § 761.61(c) is subject to the following conditions:

1. As stated in 40 C.F.R. § 761.61(a), you must conduct the cleanup in accordance with all applicable requirements of 40 C.F.R. § 761.61(a)(1) through (9). A copy of those requirements is

enclosed for your convenience. The only deviation from these requirements that is approved is the elimination of verification sampling.

2. You must prepare a cleanup completion summary report that describes how you conducted the cleanup in accordance with the applicable regulatory requirements. You must send a copy to Michelle Mullin of my staff within six months after the date of this letter.

3. The EPA's Office of Land and Emergency Management (OLEM) policy is to evaluate cleanup actions comprehensively to ensure protection of human health and the environment and to reduce the environmental footprint of cleanup activities, to the maximum extent possible. In considering these principles, the EPA requests that you consider climate change and sustainability impacts during your cleanup activity. Please see section 6 of the ASTM Standard Guide to Greener Cleanups (Active Standard ASTM E2893-16e1) to identify Best Management Practices (BMPs) which may be applicable and implement those practices which the University identifies as feasible to this project - many BMPs in the Guide are applicable to this cleanup. The cleanup completion report required by Condition 2 of this approval should include a section on BMP documentation, as described in Section 6.6.5 of the ASTM Standard.

Please note that this approval does not relieve you from your duty to comply with all other applicable federal, state, and local requirements. In addition, please note that if you wish to make any changes to your Notification (including changes in the project schedule), then you must submit your proposal to Michelle Mullin, of my staff, in writing no less than 14 calendar days prior to the proposed implementation of the change. If you have any questions, please contact Ms. Mullin by e-mail at mullin.michelle@epa.gov or by telephone at (206) 553-1616.

Sincerely,

Timothy B. Hamlin
Director

Enclosure

cc: Mr. John Wallace
Industrial Hygienist/Environmental Programs
Environmental Health and Safety
University of Washington

Regulatory Requirements of 40 CFR 761.61(a) Checklist
PCC Structurals, Inc., Large Parts Campus

[ ] (1) ***Applicability***

(i) The self-implementing procedures may not be used to clean up:

(A) Surface or ground waters.
(B) Sediments in marine and freshwater ecosystems.
(C) Sewers or sewage treatment systems.
(D) Any private or public drinking water sources or distribution systems.
(E) Grazing lands.
(F) Vegetable gardens.

[ ] (ii) The self-implementing cleanup provisions shall not be binding upon cleanups conducted under other authorities, including but not limited to, actions conducted under section 104 or section 106 of CERCLA, or section 3004(u) and (v) or section 3008(h) of RCRA.

[ ] (2) ***Site characterization***. Any person conducting self-implementing cleanup of PCB remediation waste must characterize the site adequately to be able to provide the information required by paragraph (a)(3) of this section. Subpart N of this part provides a method for collecting new site characterization data or for assessing the sufficiency of existing site characterization data.

[ ] (3) ***Notification and certification***.

[ ] (i) At least 30 days prior to the date that the cleanup of a site begins, the person in charge of the cleanup or the owner of the property where the PCB remediation waste is located shall notify, in writing, the EPA Regional Administrator, the Director of the State or Tribal environmental protection agency, and the Director of the county or local environmental protection agency where the cleanup will be conducted. The notice shall include:

[ ] (A) The nature of the contamination, including kinds of materials contaminated.

[ ] (B) A summary of the procedures used to sample contaminated and adjacent areas and a table or cleanup site map showing PCB concentrations measured in all pre-cleanup characterization samples. The summary must include sample collection and analysis dates. The EPA Regional Administrator may require more detailed information including, but not limited to, additional characterization sampling or all sample identification numbers from all previous characterization activities at the cleanup site.

[ ] (C) The location and extent of the identified contaminated area, including topographic maps with sample collection sites cross referenced to the sample identification numbers in the data summary from paragraph (a)(3)(i)(B) of this section.

[ ] (D) A cleanup plan for the site, including schedule, disposal technology, and approach. This plan should contain options and contingencies to be used if

unanticipated higher concentrations or wider distributions of PCB remediation waste are found or other obstacles force changes in the cleanup approach.

[ ] (E) A written certification, signed by the owner of the property where the cleanup site is located and the party conducting the cleanup, that all sampling plans, sample collection procedures, sample preparation procedures, extraction procedures, and instrumental/chemical analysis procedures used to assess or characterize the PCB contamination at the cleanup site, are on file at the location designated in the certificate, and are available for EPA inspection. Persons using alternate methods for chemical extraction and chemical analysis for site characterization must include in the certificate a statement that such a method will be used and that a comparison study which meets or exceeds the requirements of subpart Q of this part, and for which records are on file, has been completed prior to verification sampling.

[ ] (ii) Within 30 calendar days of receiving the notification, the EPA Regional Administrator will respond in writing approving of the self-implementing cleanup, disapproving of the self-implementing cleanup, or requiring additional information. If the EPA Regional Administrator does not respond within 30 calendar days of receiving the notice, the person submitting the notification may assume that it is complete and acceptable and proceed with the cleanup according to the information the person provided to the EPA Regional Administrator. Once cleanup is underway, the person conducting the cleanup must provide any proposed changes from the notification to the EPA Regional Administrator in writing no less than 14 calendar days prior to the proposed implementation of the change. The EPA Regional Administrator will determine in his or her discretion whether to accept the change, and will respond to the change notification verbally within 7 calendar days and in writing within 14 calendar days of receiving it. If the EPA Regional Administrator does not respond verbally within 7 calendar days and in writing within 14 calendar days of receiving the change notice, the person who submitted it may deem it complete and acceptable and proceed with the cleanup according to the information in the change notice provided to the EPA Regional Administrator.

[ ] (iii) Any person conducting a cleanup activity may obtain a waiver of the 30-day notification requirement, if they receive a separate waiver, in writing, from each of the agencies they are required to notify under this section. The person must retain the original written waiver as required in paragraph (a)(9) of this section.

[ ] (4) ***Cleanup levels.*** For purposes of cleaning, decontaminating, or removing PCB remediation waste under this section, there are four general waste categories: bulk PCB remediation waste, non-porous surfaces, porous surfaces, and liquids. Cleanup levels are based on the kind of material and the potential exposure to PCBs left after cleanup is completed.

[ ] (i) *Bulk PCB remediation waste.* Bulk PCB remediation waste includes, but is not limited to, the following non-liquid PCB remediation waste: soil, sediments, dredged materials, muds, PCB sewage sludge, and industrial sludge.

[ ] (A) *High occupancy areas.* The cleanup level for bulk PCB remediation waste in high occupancy areas is $\leq$1 ppm without further conditions. High occupancy areas

where bulk PCB remediation waste remains at concentrations >1 ppm and ≤10 ppm shall be covered with a cap meeting the requirements of paragraphs (a)(7) and (a)(8) of this section.

[ ] (B) *Low occupancy areas.*

[ ] (1) The cleanup level for bulk PCB remediation waste in low occupancy areas is ≤25 ppm unless otherwise specified in this paragraph.

[ ] (2) Bulk PCB remediation wastes may remain at a cleanup site at concentrations >25 ppm and ≤50 ppm if the site is secured by a fence and marked with a sign including the M_L mark.

[ ] (3) Bulk PCB remediation wastes may remain at a cleanup site at concentrations >25 ppm and ≤100 ppm if the site is covered with a cap meeting the requirements of paragraphs (a)(7) and (a)(8) of this section.

[ ] (ii) *Non-porous surfaces.* In high occupancy areas, the surface PCB cleanup standard is ≤ 10 μg/100 cm^2 of surface area. In low occupancy areas, the surface cleanup standard is <100 μg/100 cm^2 of surface area. Select sampling locations in accordance with subpart P of this part or a sampling plan approved under paragraph (c) of this section.

[ ] (iii) *Porous surfaces.* In both high and low occupancy areas, any person disposing of porous surfaces must do so based on the levels in paragraph (a)(4)(i) of this section. Porous surfaces may be cleaned up for use in accordance with §761.79(b)(4) or §761.30(p).

[ ] (iv) *Liquids.* In both high and low occupancy areas, cleanup levels are the concentrations specified in §761.79(b)(1) and (b)(2).

[ ] (v) *Change in the land use for a cleanup site.* Where there is an actual or proposed change in use of an area cleaned up to the levels of a low occupancy area, and the exposure of people or animal life in or at that area could reasonably be expected to increase, resulting in a change in status from a low occupancy area to a high occupancy area, the owner of the area shall clean up the area in accordance with the high occupancy area cleanup levels in paragraphs (a)(4)(i) through (a)(4)(iv) of this section.

[ ] (vi) The EPA Regional Administrator, as part of his or her response to a notification submitted in accordance with §761.61(a)(3) of this part, may require cleanup of the site, or portions of it, to more stringent cleanup levels than are otherwise required in this section, based on the proximity to areas such as residential dwellings, hospitals, schools, nursing homes, playgrounds, parks, day care centers, endangered species habitats, estuaries, wetlands, national parks, national wildlife refuges, commercial fisheries, and sport fisheries.

[ ] (5) ***Site cleanup.*** In addition to the options set out in this paragraph, PCB disposal technologies approved under §§761.60 and 761.70 are acceptable for on-site self-implementing PCB remediation waste disposal within the confines of the operating conditions of the respective approvals.

[ ] (i) *Bulk PCB remediation waste.* Any person cleaning up bulk PCB remediation waste shall do so to the levels in paragraph (a)(4)(i) of this section.

[ ] (A) Any person cleaning up bulk PCB remediation waste on-site using a soil washing process may do so without EPA approval, subject to all of the following:

(1) A non-chlorinated solvent is used.
(2) The process occurs at ambient temperature.
(3) The process is not exothermic.
(4) The process uses no external heat.
(5) The process has secondary containment to prevent any solvent from being released to the underlying or surrounding soils or surface waters.
(6) Solvent disposal, recovery, and/or reuse is in accordance with relevant provisions of approvals issued according to paragraphs (b)(1) or (c) of this section or applicable paragraphs of §761.79.

[ ] (B) Bulk PCB remediation waste may be sent off-site for decontamination or disposal in accordance with this paragraph, provided the waste is either dewatered on-site or transported off-site in containers meeting the requirements of the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171 through 180.

[ ] (1) Removed water shall be disposed of according to paragraph (b)(1) of this section.

[ ] (2) Any person disposing off-site of dewatered bulk PCB remediation waste shall do so as follows:

[ ] (i) Unless sampled and analyzed for disposal according to the procedures set out in §§761.283, 761.286, and 761.292, the bulk PCB remediation waste shall be assumed to contain ≥50 ppm PCBs.

[ ] (ii) Bulk PCB remediation wastes with a PCB concentration of <50 ppm shall be disposed of in accordance with paragraph (a)(5)(v)(A) of this section.

[ ] (iii) Bulk PCB remediation wastes with a PCB concentration ≥50 ppm shall be disposed of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA, or a PCB disposal facility approved under this part.

[ ] (iv) The generator must provide written notice, including the quantity to be shipped and highest concentration of PCBs (using extraction EPA Method 3500B/3540C or Method 3500B/3550B followed by chemical analysis using EPA Method 8082 in SW-846 or methods validated under subpart Q of this part) at least 15 days before the first shipment of bulk PCB remediation waste from each cleanup site by the generator, to each off-site facility where the waste is destined for an area not subject to a TSCA PCB Disposal Approval.

[ ] (3) Any person may decontaminate bulk PCB remediation waste in accordance with §761.79 and return the waste to the cleanup site for disposal as long as the cleanup standards of paragraph (a)(4) of this section are met.

[ ] (ii) Non-porous surfaces. PCB remediation waste non-porous surfaces shall be cleaned on-site or off-site for disposal on-site, disposal off-site, or use, as follows:

[ ] (A) For on-site disposal, non-porous surfaces shall be cleaned on-site or off-site to the levels in paragraph (a)(4)(ii) of this section using:
(1) Procedures approved under §761.79.
(2) Technologies approved under §761.60(e).
(3) Procedures or technologies approved under paragraph (c) of this section.

[ ] (B) For off-site disposal, non-porous surfaces:
(1) Having surface concentrations <100 μg/100 cm^2 shall be disposed of in accordance with paragraph (a)(5)(i)(B)(2)(ii) of this section. Metal surfaces may be thermally decontaminated in accordance with §761.79(c)(6)(i).
(2) Having surface concentrations ≥100 μg/100 cm^2 shall be disposed of in accordance with paragraph (a)(5)(i)(B)(2)(iii) of this section. Metal surfaces may be thermally decontaminated in accordance with §761.79(c)(6)(ii).

[ ] (C) For use, non-porous surfaces shall be decontaminated on-site or off-site to the standards specified in §761.79(b)(3) or in accordance with §761.79(c).

[ ] (iii) *Porous surfaces.* Porous surfaces shall be disposed on-site or off-site as bulk PCB remediation waste according to paragraph (a)(5)(i) of this section or decontaminated for use according to §761.79(b)(4), as applicable.

[ ] (iv) *Liquids.* Any person disposing of liquid PCB remediation waste shall either:
(A) Decontaminate the waste to the levels specified in §761.79(b)(1) or (b)(2).
(B) Dispose of the waste in accordance with paragraph (b) of this section or an approval issued under paragraph (c) of this section.

[ ] (v) *Cleanup wastes.* Any person generating the following wastes during and from the cleanup of PCB remediation waste shall dispose of or reuse them using one of the following methods:

[ ] (A) Non-liquid cleaning materials and personal protective equipment waste at any concentration, including non-porous surfaces and other non-liquid materials such as rags, gloves, booties, other disposable personal protective equipment, and similar materials resulting from cleanup activities shall be either decontaminated in accordance with §761.79(b) or (c), or disposed of in one of the following facilities, without regard to the requirements of subparts J and K of this part:
(1) A facility permitted, licensed, or registered by a State to manage municipal solid waste subject to part 258 of this chapter.

(2) A facility permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste subject to §§257.5 through 257.30 of this chapter, as applicable.
(3) A hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA.
(4) A PCB disposal facility approved under this part.

[ ] (B) Cleaning solvents, abrasives, and equipment may be reused after decontamination in accordance with §761.79.

[ ] (6) ***Cleanup verification*** —

[ ] (i) *Sampling and analysis*. Any person collecting and analyzing samples to verify the cleanup and on-site disposal of bulk PCB remediation wastes and porous surfaces must do so in accordance with Subpart O of this part. Any person collecting and analyzing samples from non-porous surfaces must do so in accordance with subpart P of this part. Any person collecting and analyzing samples from liquids must do so in accordance with §761.269. Any person conducting interim sampling during PCB remediation waste cleanup to determine when to sample to verify that cleanup is complete, may use PCB field screening tests.

[ ] (ii) *Verification.*

(A) Where sample analysis results in a measurement of PCBs less than or equal to the levels specified in paragraph (a)(4) of this section, self-implementing cleanup is complete.
(B) Where sample analysis results in a measurement of PCBs greater than the levels specified in paragraph (a)(4) of this section, self-implementing cleanup of the sampled PCB remediation waste is not complete. The owner or operator of the site must either dispose of the sampled PCB remediation waste, or reclean the waste represented by the sample and reinitiate sampling and analysis in accordance with paragraph (a)(6)(i) of this section.

[ ] (7) ***Cap requirements.*** A cap means, when referring to on-site cleanup and disposal of PCB remediation waste, a uniform placement of concrete, asphalt, or similar material of minimum thickness spread over the area where remediation waste was removed or left in place in order to prevent or minimize human exposure, infiltration of water, and erosion. Any person designing and constructing a cap must do so in accordance with §264.310(a) of this chapter, and ensure that it complies with the permeability, sieve, liquid limit, and plasticity index parameters in §761.75(b)(1)(ii) through (b)(1)(v). A cap of compacted soil shall have a minimum thickness of 25 cm (10 inches). A concrete or asphalt cap shall have a minimum thickness of 15 cm (6 inches). A cap must be of sufficient strength to maintain its effectiveness and integrity during the use of the cap surface which is exposed to the environment. A cap shall not be contaminated at a level $\geq$1 ppm PCB per Aroclor^{TM}(or equivalent) or per congener. Repairs shall begin within 72 hours of discovery for any breaches which would impair the integrity of the cap.

[ ] (8) ***Deed restrictions for caps, fences and low occupancy areas.*** When a cleanup activity conducted under this section includes the use of a fence or a cap, the owner of the site must maintain the fence or cap, in perpetuity. In addition, whenever a cap, or the procedures and

requirements for a low occupancy area, is used, the owner of the site must meet the following conditions:

[ ] (i) Within 60 days of completion of a cleanup activity under this section, the owner of the property shall:

[ ] (A) Record, in accordance with State law, a notation on the deed to the property, or on some other instrument which is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property:

(1) That the land has been used for PCB remediation waste disposal and is restricted to use as a low occupancy area as defined in §761.3.

(2) Of the existence of the fence or cap and the requirement to maintain the fence or cap.

(3) The applicable cleanup levels left at the site, inside the fence, and/or under the cap.

[ ] (B) Submit a certification, signed by the owner, that he/she has recorded the notation specified in paragraph (a)(8)(i)(A) of this section to the EPA Regional Administrator.

[ ] (ii) The owner of a site being cleaned up under this section may remove a fence or cap after conducting additional cleanup activities and achieving cleanup levels, specified in paragraph (a)(4) of this section, which do not require a cap or fence. The owner may remove the notice on the deed no earlier than 30 days after achieving the cleanup levels specified in this section which do not require a fence or cap.

[ ] (9) ***Recordkeeping***. For paragraphs (a)(3), (a)(4), and (a)(5) of this section, recordkeeping is required in accordance with §761.125(c)(5).